

CODE OF GOOD AGRICULTURAL PRACTICE IN BULGARIA, ROMANIA AND MOLDOVA

Outline, Conceptual Framework and Prospects of Implementation

Water management and transposition of EU legislation

The Bulgarian Code of Good Agricultural Practice is a set of rules adopted to prevent the pollution of waters by nitrates from agricultural sources. The objective of the Code is to reduce the levels of nitrate losses from agriculture and to restore water quality, and also to prevent further such pollution of groundwaters and surface waters.

The Code was approved by **Decree RD-09-431** of the Minister of Agriculture and Forests from 22 August 2005. It is based on **Regulation No 2** from 16 October 2000 (of the Bulgarian Water Law of 1999) for the protection of waters from nitrate pollution from agricultural sources, issues by the Minister of the Environment and Waters, Minister of Public Health and Minister of Agriculture and Forests (Official Gazette, issue 87 from 24.10.2000)

The existing version of the GAP Code in **Romania** is a document produced in 2002, according to the **Governmental Decision 964/Oct 13, 2000, Annex 3**, concerning the approval of the Action Plan for Water Protection From Nitrate Pollution From Agricultural Sources and submitted to specialists and public consultation. It was posted on Ministry of Waters and protection of Environment and Ministry of Agricultural and Forest web sites.

The Moldovan Code of Good Agricultural Practice represents a series of generalizations taking into account the achievements of good practices allowing the prevention and diminishing of the negative impact of agriculture on the environment. Although this Code has been developed in accordance with many European normative acts and it is in keeping with the legislation of the Republic of Moldova, it does not represent a mandatory document – Directive, but it is just a document-recommendation, that is not a definitive one, but it is to be reviewed taking into account the environmental situation and gained knowledge and practices.

The Code is part of the countries' obligations for protection of the environment and waters, associated with EU accession. The respective national documents reflect the transposition of the EU Nitrates Directive or **Directive 91/676/EEC** from 12.12.1991 concerning the protection of waters against pollution caused by nitrates from agriculture. This aims to prevent high concentrations of nitrates in water by limiting the polluting effects of intensive agricultural production and by reducing the use of chemical fertilisers. It includes provisions for waste water treatment and agricultural management — for example storage and use of nitrogen fertilizers and effluent from animal husbandry. The directive defines 'Vulnerable areas', places already affected by nitrate pollution or in danger of being affected in the future; those must be designated and monitored by Member States. This directive also requires the monitoring of waters to determine nitrate concentrations. In areas where the level exceeds 50 mg/l, or is likely to do so in the absence of pollution controls, the Directive requires that strict legally binding measures be taken in respect of farm practices so as to reduce nitrate losses to waters.

Directive 91/676/EEC is complementary to the **EU Water Framework Directive (WFD)** 2000/60/EC, adopted on 22 December 2000 and remains in place. The WFD is the most substantial piece of EC water legislation to date. It requires all inland and coastal waters to reach "good status" by 2015. It will do this by establishing a river basin district structure within which demanding environmental objectives are set, including ecological targets for surface and ground waters. The WFD is guiding document for work on the Danube Regional Project, mainly through the development and implementation of its River Basin Management Plan and involvement of vast range of stakeholders, among them major water using sectors, such as agriculture as well as those authorities involved in planning land and water use at local, regional, national and international levels.

The Bulgarian Regulation No 2 designates the waters in water bodies or parts of these, which are already affected by nitrate pollution from agricultural sources or in danger of being affected in the future and also designates the regions, in which waters are contaminated from leaching of nutrients downwards. Regulation No 2 uses the following criteria for nitrate pollution: surface waters used or designated for drinking contain nitrates with concentration in excess of 50 mg/l; ground waters contain nitrates with concentration in excess of 50 mg/l; surface waters in lakes and estuaries and the coastal sea waters are affected by eutrophication; there are data available of contaminated waters or vulnerable ground bodies in danger of being contaminated in the future. As mentioned above the Regulation no 2 *provides for the introduction* of the Code of Good Agricultural Practice in Bulgaria. The Regulation *envisages training* of farmers and provision of information to farmers and agricultural producers, as well as to a vast range of agrarian stakeholders on the application of the adopted Code. This Regulation also *envisages additional measures* to the Code to limit and eliminate nitrate pollution.

The Code: voluntary or obligatory

The main sources of agricultural nitrates are organic fertilisers such as animal manures and slurries, silage effluent, dairy washings, soiled water and mushroom compost, and also chemical fertilisers containing nitrogen. Other non-agricultural materials that are used to promote pasture and crop production are also covered by the Bulgarian Code of Good Agricultural Practice. Examples of such materials are sewage sludge, industrial wastes and residues from fish farms. The Code is a set of rules containing advice and recommendations on farm practices that are beneficial to the environment and whose application helps maintain water quality. The code is intended to protect the quality of all surface waters, i.e. rivers and lakes, as well as groundwaters.

The Code of Good Agricultural Practice is designed to promote sustainable farm practices while maintaining high water quality. The Code has been prepared in line with the requirements of the EU Directive 91/676/EEC. *Therefore in areas where the nitrate concentration of the river basin area is less than 50mg/l, this Code has a voluntary status. Where nitrate levels are close to or above 50mg/l, the Code has a legal status and farmers are required to strictly implement it. Such areas are designated as "Vulnerable Zones".* In these areas Action Programmes which contain additional measures to the Code have to be implemented in order to reduce the level of nitrate pollution from agricultural sources.

The target regions of the Project 'Best Agricultural Practice in My Farm' DRPII-21728 in Bulgaria: Silistra and Dobrich, part of the Dobrudja Region in the Lower Danube Plane, are within the designated vulnerable zones. A map of the vulnerable zones in Bulgaria is provided for reference along with this document. There is also a table of ground water bodies or part of such bodies that are contaminated with nitrates from agricultural sources. Specific locations associated with ground water bodies in both regions of Silistra and Dobrich are included in the table. The map and table are part of the supplementary documents to the Regulation no 2 and the Code approved by Decree RD-795/10.08.2004 of the Minister of Environment and Waters. *The implementation of the Code in Silistra and Dobrich Region is obligatory.*

The Bulgarian **Action Programme** for reduction and elimination of nitrate pollution from agriculture is under preparation. It draft will be presented at a training of farmers in Silistra in March 2006, part of the activities within the 'Best Agricultural Practice in My Farm' project.

Prohibitions of the Code

Irrespective of the fact whether their land is in the vulnerable zones or not, farmers are prohibited to use fertilisers in belt II of sanitation zones of drinking water sources where nitrates are over 35 mg/l. There is also a prohibition of storage of organic and mineral fertilisers on territories adjoining reservoirs, rivers, flood planes, lakes and the seashore. There is a ban on the disposal of left over fertilisers and packaging of fertilisers in surface waters and deserted wells. Washing of packaging, work clothes and equipment associated with use of fertilisers in rivers, reservoirs and other surface water bodies is also prohibited.

These prohibitions can be regarded as elements of Good Farming Practice. There are similar requirements associated mainly with water pollution, soil fertility and designated conservation sites. They are part of various Bulgarian laws and are associated with the environment and human health.

Use of Nitrogen Fertilisers

The Code is a compact two-chapter document with a brief preamble. The background and prohibitions, comprising the preamble have already been elucidated. The first chapter focuses on the application of nitrogen containing fertilizers while the second addresses storage of mineral and organic fertilisers.

The first chapter consists of 25 items saying when to apply organic and chemical fertilisers to land, giving the appropriate rates of application to land and some precautions to be taken when applying fertilisers, some irrigation and soil cultivation practices. Here are some of the highlights in Chapter 1 dealing with both manures and mineral fertilisers.

The spreading on land of animal **manures** is an acceptable method of disposal provided care is taken regarding the timing, land suitability and the application process. The application of slurry or solid manures should be carried out as early as practicable in the growing season, so as to maximise the uptake of nutrients by crops and to minimise pollution risks.

Chemical fertilisers containing nitrogen should be applied to the land shortly before the start of the growing season, i.e. March, provided ground and weather conditions are suitable. As a general rule, nitrogen fertiliser applications should not be applied after early September on established grassland. Applications of nitrogen fertiliser to cultivated crops should not be made after the main growth period of the crop is completed. For most crops this will be before the main summer period of July and August.

As a general rule, the application of slurry and other concentrated organic fertilisers to land should be avoided during the non-growing season, which is typically October to March. Exception to this rule may be permitted if the landowner, in consultations with a qualified agricultural advisor, establishes that landspreading of these organic fertilisers can be carried out during this period in accordance with the Code without the risk of causing water pollution.

There is a **ban on introduction of fertilizers** between 1 November and 31 January. On bare lands with no crops the ban is till 15 February. New orchards can receive organic fertilisers till 15 November.

Another important point is the **rate of application**. The application rates of organic manures according to the Code should reflect both the nutrient requirements of the crop being grown and the nutrient status of the soil, provided the nitrogen content of the applied organic fertilisers does not exceed 170 kg/ha (17 kg/dKa) of active substance annually. Where the recommended nitrogen application rates for crops exceed these limits, the additional nitrogen required may be obtained from chemical fertiliser. In exceptional cases with intensive production the rate of application can go up to 21 kg/dKa annually. When over 12 kg/dKa are introduced the quantity is divided into two parts: 2/3 is introduced before sowing or planting and the remaining 1/3 during growth.

The appropriate application rates for grass and tillage crops are based on: previous cropping, fertilisation history of the field, and soil type. Type of crop, type of soil, terrain, vegetation, vicinity of water bodies and weather conditions are all factors incorporated in the rules giving prescriptions for the application of fertilisers. They are all **specific precautions** to be considered when applying organic or chemical fertilisers to prevent pollution of waters. For example fertilisers should not be applied within 5 m of water bodies in flat areas. The proper maintenance of fertiliser application facilities such as reservoirs, cisterns, pipes etc to avoid leakage is also addressed.

Storage of Organic and Mineral Fertilisers

The second chapter of the Code lists the rules for storage of organic and mineral fertilisers. Just like the previous chapter it gives sound advice based on science with specific emphasis on protecting the environment and waters.

The **storage rules** have been drafted in view of the application rules taking into account the length of the ban on the use of fertilisers. It is essential for the capacity of storage facilities.

It is a fundamental requirement that proper leak-proof storage facilities of appropriate capacity are available on the farm for the correct management of organic fertilisers. Where animals are housed during the winter or other period, there must be adequate storage capacity to safely contain all the wastes produced by the animals. The rules envisage storage facilities with a capacity of 3 months plus 1 month (in case of cold and long winter) depending on the number and kind of animals or poultry.

All tanks must be leak-proof. All manure pits, silage stores and waste heaps must have collection channels to convey all effluent to suitable storage facilities.

There are specific requirements for solid farmyard manures, slurry, soiled water and silage effluents. Storage facilities should be at least 20 m away from water bodies. An essential requirement for all storage facilities like waste heaps, silage pits etc, is that they have good walls or good concrete basis that do not leak nitrates into the soil.

The specialised stores for mineral fertilisers are also described adequately in the Code. There are special provisions for fire safety, storage space and manner of stowage to avoid mixing and leakage, labelling and packaging. Storage in common stores and sheds is possible but there are precautionary measures to avoid leakage. Storage of mineral fertilisers in the open is not allowed.

Introduction of the Code

The Code of Good Agricultural Practice is part of the Bulgarian national legislation and its application needs the involvement of a range of agricultural stakeholders. The Action Programme with additional measures to the Code aiming to reduce the level of nitrate pollution from agricultural sources is in an advanced stage of preparation. The Code may be a small document but its rules contain plenty of requirements that have to be put across to the farming community. The process of educating the farmers and agricultural producers and informing them about the Rules has already started but it is by no means a short and easy process.

Chemicals use reporting and exchanges of good practices are essential tools for raising the efficiency of the good agricultural practice. It is also evident that observation of some rules, especially the rules for storage of organic fertilisers, requires substantial investment from many small farmers. National and EU funds should be made available to them within the Action Programme.

The Danube River Basin in Bulgaria, designated as vulnerable zone, requires the special attention of all stakeholders in the water management process. Among them the farming and rural communities play an essential role as they are most closely associated with agriculture and applying the Code. Making farmers feel part of a larger regional community working together toward the achievement of common goals for improvement of the environment is a challenging task. The current project is an effort aimed at improving the knowledge of concerned stakeholders in the farming and local expert communities in Bulgaria, Romania and Moldova on the issue of good agricultural practice. The concept of 'Best Agricultural Practice' employed by the Danube Regional Project recently will be introduced in another document of the series.